

July 2015

Russell County

Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

A total of 15 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Russell County economy.¹ These 15 sectors have a total direct output of approximately \$172 million and support 569.9 jobs in Russell County. Running the model for all 15 sectors simultaneously produces the following results:

Agriculture Contribution in Russell County

Impact Type ²	Employment	% of Total Employment	Total Value Added ³	% of Gross Regional Product ⁴	Output ⁵	% of Gross Regional Product
Direct Effect	569.9	13%	\$42,144,757	14%	\$171,770,427	57%
Indirect Effect	112.7	3%	\$7,869,153	3%	\$18,129,038	6%
Induced Effect	60.6	1%	\$3,664,655	1%	\$7,040,634	2%
Total Effect	743.1	17%	\$53,678,565	18%	\$196,940,099	65%

As shown in the above table, agriculture, food, and food processing supports 743.1 jobs, or 17% of the entire workforce in the county. These industries provide a total economic contribution of approximately \$197 million, roughly 65% of Gross Region Product (GRP). As noted below in the calculation of Gross Regional Product, imports and institutional sales are subtracted. Therefore, counties that import a relatively large amount of goods and services will have a reduced GRP which may lead to agricultural output being greater than GRP.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 15 agriculture, food, and food processing sectors is approximately \$54 million, or 18% of the GRP. This indicates that personal income, business income, and taxes generated by these sectors account for 18% of the total economy.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

¹ Article on building a contribution analysis in IMPLAN that avoids double counting:
https://implan.com/index.php?option=com_content&view=category&id=19

² Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

³ Value Added = Labor Income + Indirect Business Taxes + Other Property Type Income

⁴ GRP = Final Demand of Households + Governments Expenditures + Capital + Exports - Imports - Institutional Sales

⁵ Output = Intermediate Inputs + Value Added

In the top ten by employment, Animal production, except cattle and poultry and eggs is the top employer in the agriculture industry with 121.3 employees. This table also shows the amount of jobs that are created by the agriculture industry in Russell County.

Top 10 Industries Affected by Employment

Sector Description:	Total Employment	Total Output
Animal production, except cattle and poultry and eggs.....	121.3	\$10,698,677
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	114.2	\$25,763,753
Grain farming	107.0	\$32,604,812
All other crop farming.....	65.8	\$7,269,200
Other animal food manufacturing.....	47.8	\$69,858,526
Veterinary services	42.7	\$2,064,319
Dairy cattle and milk production.....	37.4	\$6,060,507
Wholesale trade.....	30.6	\$5,852,264
Farm machinery and equipment manufacturing	21.1	\$13,179,282
Support activities for agriculture and forestry	14.8	\$776,928

The Other animal food manufacturing industry directly contributes approximately \$70 million to Russell County's economy. This table also shows how much revenue is generated in other industries by having a strong agriculture industry.

Top 10 Industries Affected by Output

Sector Description:	Total Employment	Total Output
Other animal food manufacturing.....	47.8	\$69,858,526
Grain farming	107.0	\$32,604,812
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	114.2	\$25,763,753
Farm machinery and equipment manufacturing	21.1	\$13,179,282
Animal production, except cattle and poultry and eggs.....	121.3	\$10,698,677
All other crop farming.....	65.8	\$7,269,200
Dairy cattle and milk production.....	37.4	\$6,060,507
Wholesale trade.....	30.6	\$5,852,264
Petroleum refineries	0.4	\$4,362,059
Oilseed farming	1.6	\$3,096,530

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture sector and the output they contributed to Russell County's economy.

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All 105 counties in Kansas have IMPLAN models with an agriculture contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Kansas, the retail sector was omitted.